We Claim:

- A blood processing system comprising
- a processing chamber to process blood, and
- a fluid flow cassette communicating with the processing chamber comprising
 - a body,
 - a pump chamber formed in the body,
- a flexible diaphragm on the pump chamber responsive to an applied fluid pressures for flexure toward and away from the pump chamber to pump fluid through the pump chamber,
- a flow path formed, at least in part, in the body, to couple the pump chamber in fluid flow communication with the processing chamber, to convey fluid pumped by the pump chamber into the processing chamber, and

an in line cavity formed in the body and located in the flow path to trap air to prevent entry of air into the processing chamber.

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